

prove a profitable crop. Some typical average annual increments are *Carya ovata* 0.22 inch, *Quercus macrocarpa* 0.30 inch, *Q. velutina* 0.29 inch, *Acer saccharinum* 0.63 inch, and *Juglans nigra* 0.34 inch.—GEO. D. FULLER.

Inheritance of height in peas.—According to MENDEL'S original classic experiment with peas, the cross tall \times dwarf gives a simple monohybrid ratio, with tallness dominant. The work of a number of recent investigators, however, has indicated that height in peas is a much more complex character, and that Mendel's 3:1 ratio by no means states the whole truth. WHITE¹⁷ has made a critical examination of these investigations and has added some of his own. He concludes that there are at least 5 genetic factors involved, 2 for internode length, and 3 for number of nodes. He points out, however, that the same genetic pea material that MENDEL used will still give the 3:1 ratio. "The inheritance of height in peas has become complex only because of studies on new or distinctly different material, the characters of which, there is reason to believe, are due to distinct mutations."—MERLE C. COULTER.

Intercellular canals.—RECORD¹⁸ has investigated the occurrence of intercellular canals in dicotyledonous woods, and has discovered 16 families in which they occur, mostly tropical. In some cases they are a normal feature of the wood, while in other cases they develop as a result of injury. They vary in direction and origin, in certain features resembling those of gymnosperms, but in many important features quite distinct. The secretions exhibit a wide range of variation, being resinous, oily, gummy, or tanniferous, as contrasted with conifers, in which the secretions are wholly resinous. RECORD concludes that the presence of intercellular canals in wood is a valuable diagnostic feature, and it was with this primarily in view that the investigation was made.—J. M. C.

Inheritance in *Pisum*.—WHITE¹⁹ has presented a very significant paper on the interrelation of the genetic factors of *Pisum*. He has collected a mass of data of his own and also of earlier investigators of *Pisum*. He distinguishes 35 factors and discusses 5 linkage groups. A model section appears under the title "Modification of the expression of *Pisum* factors by different environments and by each other." This is one of the first successful attempts to make an intensive study of inheritance in plants, such as has been so well made on the fruit fly. Another such study, on corn, is now maturing at Cornell under the direction of Dr. R. A. EMERSON.—MERLE C. COULTER.

¹⁷ WHITE, ORLAND E., Inheritance studies in *Pisum*. III. The inheritance of height in peas. Mem. Torr. Bot. Club 17:316-322. fig. 1. 1918.

¹⁸ RECORD, S. J., Intercellular canals in dicotyledonous woods. Jour. Forestry 22:429-441. 1918.

¹⁹ WHITE, ORLAND E., Inheritance studies in *Pisum*. IV. Interrelation of the genetic factors of *Pisum*. Jour. Agric. Research 11:167-190. 1917.